10-1-1989

Test 1630: John Deere 4755 and 4760 Quadrange Diesel 16-Speed

Tractor Museum
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NEBRASKA OECD TRACTOR TEST 1630—SUMMARY 068
JOHN DEERE 4755 QUADRANGE DIESEL
ALSO JOHN DEERE 4760 QUADRANGE DIESEL
16 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—998 rpm)					
177.11 *(132.07)*	2200	9.73 *(36.82)*	0.379 *(0.231)*	18.21 *(3.59)*	
Maximum Power (2 Hours)					
180.35 *(134.49)*	2000	9.55 *(36.17)*	0.366 *(0.223)*	18.88 *(3.72)*	Air temperature
VARYING POWER AND FUEL CONSUMPTION					
177.11 *(132.07)*	2200	9.73 *(36.82)*	0.379 *(0.231)*	18.21 *(3.59)*	75°F *(24°C)*
154.31 *(115.07)*	2253	8.77 *(33.20)*	0.393 *(0.239)*	17.60 *(3.47)*	Relative humidity
116.72 *(87.03)*	2281	7.25 *(27.45)*	0.429 *(0.261)*	16.10 *(3.17)*	56%
79.32 *(59.15)*	2317	5.51 *(20.87)*	0.480 *(0.292)*	14.39 *(2.83)*	Barometer
40.11 *(29.91)*	2351	3.99 *(15.12)*	0.688 *(0.419)*	10.04 *(1.98)*	28.90″ Hg *(97.87 kPa)*
0.77 *(0.58)*	2385	2.39 *(9.04)*	21.356 *(12.990)*	0.32 *(0.06)*	

Maximum Torque 575 lb.-ft *(779 Nm)* at 1400 rpm
Maximum Torque Rise 35.9%
Torque Rise at 1000 engine rpm 14%

DRAWBAR PERFORMANCE
FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Temp.°F *(°C)* Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—8th (C2) Gear									
156.97 *(117.05)*	8441 *(37.55)*	6.97 *(11.22)*	2196	3.44	0.422 *(0.257)*	16.37 *(3.22)*	186 *(86)*	58 *(14)*	29.27 *(99.12)*
75% of Pull at Maximum Power—8th (C2) Gear									
122.77 *(91.55)*	6325 *(28.13)*	7.28 *(11.72)*	2266	2.28	0.448 *(0.272)*	15.43 *(3.04)*	186 *(85)*	69 *(21)*	29.21 *(98.92)*
50% of Pull at Maximum Power—8th (C2) Gear									
83.99 *(62.63)*	4223 *(18.78)*	7.46 *(12.00)*	2304	1.47	0.516 *(0.314)*	13.40 *(2.64)*	180 *(82)*	69 *(21)*	29.21 *(98.92)*
75% of Pull at Reduced Engine Speed—10th (D1) Gear									
123.00 *(91.72)*	6332 *(28.17)*	7.28 *(11.72)*	1777	2.19	0.425 *(0.259)*	16.25 *(3.20)*	186 *(85)*	69 *(21)*	29.20 *(98.88)*
50% of Pull at Reduced Engine Speed—10th (D1) Gear									
84.10 *(62.71)*	4232 *(18.82)*	7.45 *(11.99)*	1804	1.47	0.463 *(0.282)*	14.92 *(2.94)*	180 *(82)*	69 *(21)*	29.20 *(98.88)*

Location of Test: Center for Agricultural Equipment, Lincoln Nebraska 68583-0832, U.S.A.

Dates of Test: September-October, 1989

Manufacturer: John Deere Waterloo Works, P.O. Box 3500, Waterloo, Iowa 50704

FUEL OIL and TIME: Fuel No. 2 Diesel **Cetane No.** 51.1 **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.8300 **Fuel weight** 6.910 lbs/gal *(0.828 kg/l)* **Oil SAE** 15W40 **API service classification** CD/SD **To motor** 4.344 gal *(16.442 l)* **Drained from motor** 4.101 gal *(15.526 l)* **Transmission and hydraulic lubricant** John Deere HyGard fluid **Total time engine was operated** 19.0 hours.

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** *RG6076A109849* **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** (as specified) 4.56″ × 4.75″ *(115.8 mm × 120.7 mm)* **Compression ratio** 16.0 to 1 **Displacement** 466 cu in *(7634 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element and prefilter **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan.

ENGINE OPERATING PARAMETERS: Fuel rate 66.6-72.8 lb/hr *(30.2-33.0 kg/hr)* **High idle** 2350-2400 rpm **Turbo boost** nominal 16-19 psi *(110-131 kPa)* as measured 17.0 psi *(117 kPa)*.

CHASSIS: Type standard **Serial No.** *RW4755H001852* **Tread width** rear 64.6″ *(1642 mm)* to 115.7″ *(2938 mm)* front 61.0″ *(1550 mm)* to 85.0″ *(2160 mm)* **Wheel base** 118.5″ *(3010 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Nominal travel speeds mph *(km/h)*** first 2.17 *(3.49)* second 2.75 *(4.43)* third 3.91 *(6.30)* fourth 4.84 *(7.80)* fifth 4.97 *(8.00)* sixth 5.69 *(9.16)* seventh 6.15 *(9.90)* eighth 7.22 *(11.63)* ninth 8.75 *(14.09)* tenth 9.22 *(14.84)* eleventh 10.28 *(16.55)* twelfth 11.11 *(17.89)* thirteenth 11.71 *(18.85)* fourteenth 13.05 *(21.01)* fifteenth 16.66 *(26.83)* sixteenth 21.16 *(34.07)* reverse 4.09 *(6.58)*, 5.19 *(8.35)*, 9.13 *(14.70)*, 10.72 *(17.27)*, 11.59 *(18.67)*, 13.62 *(21.93)* **Clutch** multiple wet disc hydraulically power actuated by foot pedal **Brakes** multiple wet disc hydraulically power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 998 rpm at 2200 engine rpm **Unladen tractor mass** 16030 lb *(7271 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

DRAWBAR PERFORMANCE AT 2000 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Temp.°F *(°C)* Air dry bulb	Barom. inch Hg *(kPa)*
				3rd (A3) Gear					
127.37 *(94.98)*	13925 *(61.94)*	3.43 *(5.52)*	2246	14.24	0.491 *(0.298)*	14.09 *(2.77)*	182 *(83)*	52 *(11)*	29.27 *(99.12)*
				4th (B1) Gear					
153.68 *(114.60)*	13005 *(57.85)*	4.43 *(7.13)*	2150	6.51	0.435 *(0.265)*	15.87 *(3.13)*	185 *(85)*	51 *(11)*	29.27 *(99.12)*
				5th (A4) Gear					
153.19 *(114.23)*	12851 *(57.16)*	4.47 *(7.19)*	2134	7.33	0.435 *(0.264)*	15.90 *(3.13)*	185 *(85)*	54 *(12)*	29.27 *(99.12)*
				6th (C1) Gear					
156.06 *(116.37)*	11485 *(51.09)*	5.10 *(8.20)*	2079	5.34	0.422 *(0.257)*	16.36 *(3.22)*	186 *(85)*	55 *(13)*	29.27 *(99.12)*
				7th (B2) Gear					
158.91 *(118.50)*	11172 *(49.70)*	5.33 *(8.58)*	2008	4.92	0.415 *(0.252)*	16.66 *(3.28)*	186 *(86)*	56 *(13)*	29.27 *(99.12)*
				8th (C2) Gear					
160.43 *(119.63)*	9540 *(42.43)*	6.31 *(10.15)*	1998	3.97	0.409 *(0.249)*	16.90 *(3.33)*	188 *(86)*	57 *(14)*	29.27 *(99.12)*
				9th (B3) Gear					
158.10 *(117.90)*	7658 *(34.06)*	7.74 *(12.46)*	2005	3.09	0.416 *(0.253)*	16.60 *(3.27)*	188 *(87)*	59 *(15)*	29.27 *(99.12)*
				10th (D1) Gear					
156.74 *(116.88)*	7209 *(32.06)*	8.15 *(13.12)*	1999	2.73	0.423 *(0.257)*	16.34 *(3.22)*	188 *(86)*	61 *(16)*	29.27 *(99.12)*

DRAWBAR PERFORMANCE AT 2000 RPM
MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Temp.°F *(°C)* Air dry bulb	Barom. inch Hg *(kPa)*
				2nd (A2) Gear					
131.94 *(98.39)*	19557 *(86.99)*	2.53 *(4.07)*	2248	10.25	0.468 *(0.285)*	14.77 *(2.91)*	183 *(84)*	64 *(18)*	28.88 *(97.80)*
				3rd (A3) Gear					
152.56 *(113.76)*	15860 *(70.55)*	3.61 *(5.81)*	2126	4.92	0.438 *(0.267)*	15.77 *(3.11)*	187 *(86)*	72 *(22)*	28.87 *(97.77)*
				4th (B1) Gear					
154.99 *(115.57)*	13261 *(58.99)*	4.38 *(7.05)*	2062	3.71	0.429 *(0.261)*	16.13 *(3.18)*	187 *(86)*	73 *(23)*	28.86 *(97.73)*
				5th (A4) Gear					
157.69 *(117.59)*	13192 *(58.68)*	4.48 *(7.21)*	2055	3.62	0.422 *(0.257)*	16.38 *(3.23)*	188 *(86)*	74 *(23)*	28.86 *(97.73)*
				6th (C1) Gear					
156.02 *(116.34)*	11652 *(51.83)*	5.02 *(8.08)*	2001	3.27	0.423 *(0.257)*	16.33 *(3.22)*	188 *(86)*	75 *(24)*	28.85 *(97.70)*
				7th (B2) Gear					
159.37 *(118.84)*	10996 *(48.91)*	5.44 *(8.75)*	1999	2.91	0.412 *(0.251)*	16.76 *(3.30)*	189 *(87)*	75 *(24)*	28.85 *(97.70)*
				8th (C2) Gear					
158.28 *(118.03)*	9229 *(41.05)*	6.43 *(10.35)*	2002	2.56	0.416 *(0.253)*	16.60 *(3.27)*	188 *(86)*	76 *(24)*	28.84 *(97.66)*
				9th (B3) Gear					
155.16 *(115.70)*	7432 *(33.06)*	7.83 *(12.60)*	2002	1.92	0.424 *(0.258)*	16.31 *(3.21)*	189 *(87)*	77 *(25)*	28.83 *(97.63)*
				10th (D1) Gear					
154.01 *(114.84)*	7000 *(31.14)*	8.25 *(13.28)*	2000	1.83	0.427 *(0.260)*	16.18 *(3.19)*	188 *(87)*	77 *(25)*	28.82 *(97.60)*

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 128° F *(53° C)*. This tractor is equipped with a variable speed cooling fan. Since engine power is influenced by fan speed, all power tests were conducted at approximately the same ambient air temperatures. This tractor did not meet manufacturers 3 point lift capacity claim of 8870 lb *(4023 kg)* or 9710 lb *(4404 kg)* with lift assist cylinder. The performance figures on this summary were taken from a test conducted under the OECD restricted standard test code procedure.

Report reissued. Supplemental sales permit for John Deere 4760 Quadrange Diesel, November, 1991.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1630,** Summary 068, December 22, 1989.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
R. D. GRISSO
L. L. BASHFORD
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE AT 2200 RPM

MAXIMUM POWER IN SELECTED GEARS—BALLASTED TRACTOR

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
				2nd (A2) Gear					
130.62 *(97.41)*	19898 *(88.51)*	2.46 *(3.96)*	2248	12.70	0.477 *(0.290)*	14.50 *(2.86)*	183 *(84)*	60 *(16)*	28.88 *(97.80)*
				3rd (A3) Gear					
152.18 *(113.48)*	15217 *(67.69)*	3.75 *(6.04)*	2201	4.58	0.441 *(0.268)*	15.66 *(3.09)*	186 *(86)*	72 *(22)*	28.87 *(97.77)*
				4th (B1) Gear					
152.82 *(113.96)*	12196 *(54.25)*	4.70 *(7.56)*	2201	3.27	0.437 *(0.266)*	15.82 *(3.12)*	186 *(86)*	72 *(22)*	28.87 *(97.77)*
				5th (A4) Gear					
154.97 *(115.56)*	12057 *(53.63)*	4.82 *(7.76)*	2200	3.27	0.432 *(0.263)*	16.00 *(3.15)*	187 *(86)*	74 *(23)*	28.86 *(97.73)*
				6th (C1) Gear					
154.15 *(114.95)*	10444 *(46.45)*	5.54 *(8.91)*	2197	2.82	0.436 *(0.265)*	15.85 *(3.12)*	188 *(86)*	74 *(23)*	28.85 *(97.70)*
				7th (B2) Gear					
155.88 *(116.24)*	9730 *(43.28)*	6.01 *(9.67)*	2201	2.73	0.429 *(0.261)*	16.09 *(3.17)*	187 *(86)*	75 *(24)*	28.84 *(97.66)*
				8th (C2) Gear					
155.95 *(116.29)*	8259 *(36.74)*	7.08 *(11.40)*	2198	2.28	0.429 *(0.261)*	16.10 *(3.17)*	187 *(86)*	75 *(24)*	28.84 *(97.66)*
				9th (B3) Gear					
151.98 *(113.33)*	6604 *(29.38)*	8.63 *(13.89)*	2202	1.83	0.441 *(0.268)*	15.68 *(3.09)*	187 *(86)*	77 *(25)*	28.83 *(97.63)*

TRACTOR SOUND LEVEL WITH CAB	**dB(A)**
Gear closest to 4.7 mph *(7.5 km/h)*—4th (B1) Gear	76.0
Maximum sound level	76.0
Transport speed—no load—16th (D4) Gear	76.5
Bystander in 16th (D4) Gear	86.5

LUGGING ABILITY IN 7th (B2) GEAR

Crankshaft Speed rpm	2201	1980	1762	1539	1320	1101
Pull—lbs *(kN)*	9730 *(43.28)*	11055 *(49.18)*	12225 *(54.38)*	13051 *(58.05)*	13300 *(59.16)*	12252 *(54.50)*
Increase in Pull %	0	14	26	34	37	26
Power—Hp *(kW)*	155.88 *(116.24)*	158.75 *(118.38)*	155.59 *(116.03)*	144.61 *(107.83)*	126.21 *(94.11)*	97.32 *(72.57)*
Speed—Mph *(km/h)*	6.01 *(9.67)*	5.38 *(8.67)*	4.77 *(7.68)*	4.16 *(6.69)*	3.56 *(5.73)*	2.98 *(4.79)*
Slip %	2.73	3.09	3.27	3.80	3.80	3.45

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure psi. *(bar)*	2560 *(177)*
Location	remote outlet
Hydraulic oil temperature °F*(°C)*	131 *(55)*
Location	transmission sump
Category	III
Quick attach	Yes

Hitch point distance to ground level in. *(mm)*	9.0 *(229)*	16.0 *(406)*	25.0 *(635)*	33.0 *(838)*	40.0 *(1016)*
Lift force on frame lb. *(kN)*	8700 *(38.7)*	9228 *(41.0)*	9432 *(42.0)*	8944 *(39.8)*	8283 *(36.8)*
			with 1-44 mm. lift assist cylinder		
Hitch point distance to ground level in. *(mm)*	9.0 *(229)*	16.0 *(406)*	25.0 *(635)*	33.0 *(838)*	40.0 *(1016)*
Lift force on frame lb. *(kN)*	9860 *(43.9)*	10570 *(47.0)*	10854 *(48.3)*	10224 *(45.5)*	9411 *(41.9)*
			with 1-55 mm. lift assist cylinder		
Hitch point distance to ground level in. *(mm)*	9.0 *(229)*	16.0 *(406)*	25.0 *(635)*	33.0 *(838)*	40.0 *(1016)*
Lift force on frame lb. *(kN)*	10518 *(46.8)*	11434 *(50.9)*	11576 *(51.5)*	10737 *(47.8)*	10041 *(44.7)*

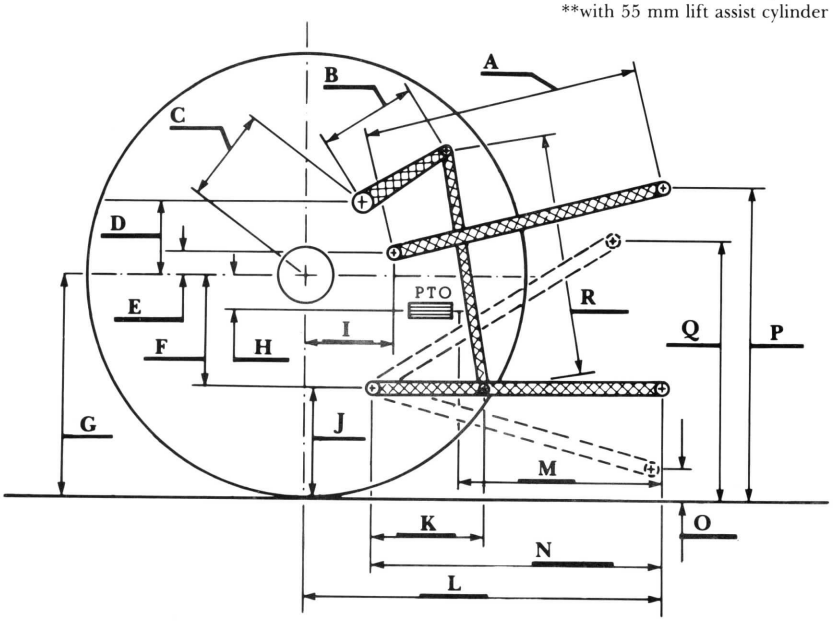
TIRES AND WEIGHT	With Ballast	Without Ballast
Rear Tires—No., size, ply & psi *(kPa)*	Four 20.8R42; **; 14 *(95)*	Two 20.8R42; **; 18 *(125)*
Ballast—Duals (total)	1950 lb *(885 kg)*	None
—Cast Iron (total)	2000 lb *(907 kg)*	None
Front Tires—No., size, ply & psi *(kPa)*	Two 14L-16.1; 10; 44 *(305)*	Two 14L-16.1; 10; 44 *(305)*
Ballast—Liquid (total)	None	None
—Test Equip (total)	340 lb *(154 kg)*	None
Height of Drawbar	22.5 in *(570 mm)*	25.5 in *(650 mm)*
Static Weight—Rear	15450 lb *(7008 kg)*	11165 lb *(5064 kg)*
—Front	4870 lb *(2209 kg)*	4865 lb *(2207 kg)*
—Total	20320 lb *(9217 kg)*	16030 lb *(7271 kg)*

THREE POINT HITCH PERFORMANCE
(OECD Static Test)

CATEGORY: III
Quick Attach: Yes

Maximum Force Exerted Through Whole Range:	5821 lbs	*(25.9 kN)*
	*6614 lbs	*(29.4 kN)*
	**7057 lbs	*(31.4 kN)*
i) Opening pressure of relief valve:	NA	
Sustained pressure with pump stalled:	2560 psi	*(177 Bar)*
ii) Pump delivery rate at minimum pressure:	35.2 GPM	*(133.2 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	33.7 GPM	*(127.6 l/min)*
Delivery pressure:	1750 psi	*(121 Bar)*
Power:	34.4 Hp	*(25.7 kW)*

*with 44 mm lift assist cylinder
**with 55 mm lift assist cylinder



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	28.1	*714*
B	18.4	*468*
C	12.9	*327*
D	12.9	*327*
E	6.8	*172*
F	13.0	*330*
G	36.1	*918*
H	7.0	*177*
I	15.1	*384*
J	23.1	*588*
K	28.2	*716*
L	44.3	*1124*
L′	49.3	*1251*
M	22.3	*565*
N	38.1	*968*
O	10.1	*257*
P	45.1	*1146*
Q	42.5	*1080*
R	37.3	*946*

L′ to end of Quick Attach

John Deere 4755 Quadrange Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Darrell Nelson, Dean and Director